



PHGB 000125 73

USA



INVESTOR IN PEOPLE

The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ



CERTIFIED COPY OF PRIORITY DOCUMENT

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

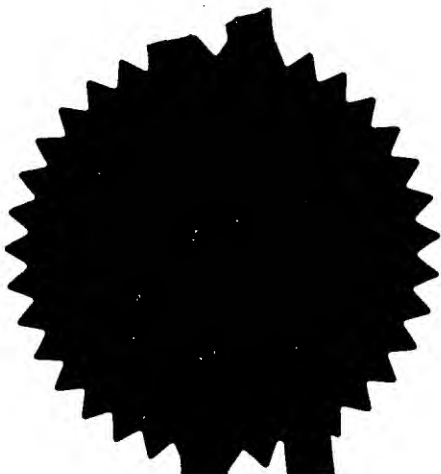
In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

Signed

Dated 4 July 2001



THE PATENT OFFICE
20 SEP 2000
NEWPORT

1/77

Request for grant of a patent

(See notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office
Cardiff Road
Newport
Gwent NP9 1RH

0023003.7

1. Your reference

PHGB 000125

2. Patent application number

(The Patent Office will fill in this part)

0023003.7

20 SEP 2000

3. Full name, address and postcode of the or of each applicant (underline all surnames)

KONINKLIJKE PHILIPS ELECTRONICS N.V.
GROENEWOUDSEWEG 1
5621 BA EINDHOVEN
THE NETHERLANDS

Patents ADP Number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

THE NETHERLANDS

4. Title of the invention

METHOD AND APPARATUS FOR SETTING A PARAMETER

5. Name of your agent (if you have one)
"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

ANDREW GORDON WHITE
Philips Corporate Intellectual Property
Cross Oak Lane
Redhill
Surrey
RH1 5HA

Patents ADP number (if you know it)

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country	Priority Application number (if you know it)	Date of filing (day/month/year)
GB	0015454.2	26-06-2000

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application	Date of filing (day/month/year)
-------------------------------	------------------------------------

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer "Yes" if:

YES

- a) any applicant named in part 3 is not an inventor, or there is an inventor who is not named as an applicant, or
any named applicant is a corporate body.
e (d))

DESCRIPTION

METHOD AND APPARATUS FOR SETTING A PARAMETER

5 This invention relates to a method and apparatus for setting a parameter, that is, to increasing or decreasing a parameter from its current value until a desired value is reached suitably, but not essentially, as a parameter setting or adjusting means operating in response to user input.

10 It is of course well known to set and/or adjust a parameter manually, by use of (for example) a slider or rotary knob potentiometer control or similar device, but, depending on the coarseness of the movement (i.e. the size and spacing of any incremental setting variations that may be made), precision setting may not be easy. One solution is to provide separate "coarse" and "fine"
15 controls, but this increases complexity for the user and costs to the manufacturer.

 An alternative arrangement is described in Patent Abstracts of Japan, publication number 07200239-A (NEC Corporation), in which the scrolling speed through items on a display screen is controlled by two buttons controlling
20 movement in opposite directions. Speed, which increases the longer a button is continuously depressed, and direction are controlled by holding the buttons down, either singly or together, but complexity is introduced and precision setting may not be easy.

 In some circumstances, manual setting is inconvenient or impossible, for
25 example in a sterile medical or fabrication domain, or where an operator's hands are fully occupied with a different task. One solution to such problems is a so-called non-manual or "hands-free" set up, an example of which is set out in United States Patent number US-A-5,850,211 (Sun Microsystems Inc), in which scrolling speed on a screen is controlled by detection of the position of a
30 viewer's eyes, but complex equipment is needed and the control is limited to the screen being viewed.

9. Enter the number of sheets for any of the following items you are filing with this form.
Do not count copies of the same document.

Continuation sheets of this form

Description	6
Claims(s)	2
Abstract	1
Drawings	2

10. If you are also filing any of the following, state how many against each item:

Priority Documents

Translations of priority documents

Statement of inventorship and right
to grant of a patent (*Patents Form 7/77*)

Request for preliminary examination and
search (*Patents Form 9/77*)

Request for substantive examination
(*Patents Form 10/77*)

Any other documents
(*Please specify*)

11.

I/We request the grant of a patent on the basis of this application.

Signature

Date 19/9/00

12. Name and daytime telephone number of
person to contact in the United Kingdom

01293 815299

(A. G. WHITE)

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 0645 500505.*
- Write your answers in capital letters using black ink or you may type them.*
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.*
- If you have answered "Yes" Patents Form 7/77 will need to be filed.*
- Once you have filled in the form you must remember to sign and date it.*
- For details of the fee and ways to pay please contact the Patent Office.*

It is an object of the invention to provide a method and apparatus for setting a parameter which allows precision setting without complexity, and which may be used non-manually.

According to a first aspect of the present invention, there is provided a
5 method of changing the value of a parameter from a current value to a desired value comprising the steps of:-

inputting a first directional command to cause a parameter to vary at a first speed in a first direction; and

inputting a second directional command to cause the parameter to vary
10 at a different speed either in the first direction or in the opposite direction.

With separate commands, a simple to learn and intuitive to operate mode of parameter setting is possible.

The second directional command is suitably a repeat of the first directional command which causes the parameter to vary in the first direction
15 at a speed higher than the first speed. The second directional command may be different to the first directional command and cause the parameter to vary in the opposite direction at a lower speed than the first speed.

Optionally, there may be two possible directional commands corresponding to "Up" and "Down" whereby the parameter is increased or
20 decreased in value. As a further variation, a third command may be supported corresponding to "Stop" which causes the parameter to retain its current value.

In such a scheme, the steps may be supported of inputting a first directional command; inputting a stop command; and inputting a second directional command, whereby the parameter varies in the first direction at a slower
25 speed than the first speed.

The commands are suitably voice commands, but may instead be manually input commands, or may be a combination of the two.

In accordance with a further aspect of the present invention there is provided an apparatus for changing the value of a parameter from a current
30 value to a desired value comprising control means to control the parameter; and input means to which the control means is responsive; wherein the input means is arranged to input directional commands whereby the control means

varies the parameter in response to a first directional command at a first speed in a first direction and then in response to a second directional command varies the parameter at a different speed in the first or in the opposite direction. Suitably, though not essentially, the input means is a voice
5 recognition device.

The invention will now be described by way of example only with reference to the accompanying drawings in which:-

Figure 1 illustrates the effect of input directional commands, according to
10 the method of the invention, on the value of a parameter;

Figures 2 and 3 illustrate the effect of different combinations of input directional commands;

Figure 4 illustrates the use of parameter setting by voice commands in a medical environment; and

15 Figure 5 illustrates the use of manually input directional commands in a home environment.

Figures 1 to 3 illustrate the variation in value of a parameter P with time T. A user gives a command "Up" represented by U1, and the parameter
20 increases at a predetermined rate, say five units per second. The user gives a command "Down" represented by D, and the parameter decreases at a slower rate, say three units per second; on the next command of "Up" at U2, the parameter increases again at a yet slower rate, say one unit per second. The assumption is that the second and third commands are given after the
25 parameter has over-shot the required value, and subsequent approaches to the required value become slower and slower. When the required value is reached, the user gives the command "Stop" represented by S and the parameter remains at this value.

If the first command had been "Down", then the parameter would first
30 have decreased at the predetermined rate of five units per second; on the next command being "Up", the parameter would then increase at the reduced rate of three units per second, and so forth.

If the rate of increase of the parameter after the first command at U1 is insufficiently fast, a repeated command of "Up" is arranged to increase the rate of change, say from five units per second to seven units per second. This is illustrated in Figure 2.

- 5 In Figure 3, the first command U1 is followed by a command "Stop", S1, and the parameter remains constant; the next command U2 causes the parameter to increase again, but at a slower rate. In this example the required value of the parameter has not been over-shot. When the required value is reached, the command "Stop" S2 causes the parameter to remain at the
10 required value.

Generalising, the algorithm to determine the value of X is as follows:-

S is an array of different speeds

Suppose $S[i] > S[j]$ for all $i > j$

Invariant $X = S[k]$

15

If (last command is Up and current command = Up)

Then $\{k := k + 1; \text{last direction command} = \text{Up};\}$

Else

20 If (last command is Down and current command = Down)

Then $\{k := k + 1; \text{last direction command} = \text{Down};\}$

Else

If (last direction command is Up and current command = Down)

25 Then $\{k := k - 1; \text{last direction command} := \text{Down}; \text{last command} := \text{Down}\}$

Else

If (last direction command is Down and current command = Up)

Then $\{k := k - 1; \text{last direction command} := \text{Up}; \text{last command} := \text{Up};\}$

30 Else

If (last command is Stop and last direction command = Up and current

command = Up)

Then {k:=k -1; last command := Up; last direction command := Up;}

Else

5 If (last command is Stop and last direction command = Down and current command = Down)

Then {k:=k -1; last command := Down; last direction command :=Down;}

Else

10 If current command = Stop

Then last command = Stop;

* X:=S[k];

15 Figure 4 illustrates the use of the invention in a medical environment when the commands are voice commands.

In an operating theatre, a surgeon 10 performing keyhole surgery on a patient 12 on a trolley 14 is watching a display on a screen display 16 physically supported by electronic control equipment 18 which includes a light source and
20 imaging means. The screen 16 is displaying a view of the operating area provided by a flexible connection 20, which supplies illumination in one direction and image information in the reverse direction between the operating area and the control equipment 18.

Adjacent the screen 16 is a voice recognition device 24 having a
25 microphone 26. Before beginning the operation, the surgeon 10 trains the voice recognition device 24 to recognise his/her voice giving the commands "Up", "Down" and "Stop". These commands may be re-entered for each operation, or they may be stored for recall during subsequent operations by a given surgeon.

During the operation, the surgeon 10 uses the appropriate commands to
30 control the brightness of the display on the screen 16. Alternatively, the commands could be used to change the focus of a camera viewing the area of operation, or the angle of the camera with respect to the area of operation.

It will be appreciated that voice activation can be arranged to be remote from the site at which the parameter is being varied; for example, in the Figure 4 embodiment a supervisory surgeon at a remote site advising the surgeon who is actually performing the operation could use voice command control to position
5 the camera viewing the site of the operation in accordance with his requirements.

In another embodiment the required parameter may be a discrete variable such as a television channel, i.e. the invention is used to step through the channels at a controllable speed, when a TV set has a very large number of
10 channels.

In Figure 5 a viewer 30 of a television set 32 having a multiplicity of channels has a hand-held infrared-operated TV channel selector 34. In addition to the conventional array of press-buttons 36, the selector 34 has three additional buttons 38 corresponding to Up, Down and Stop.

15 The viewer 30 uses the three buttons 38 to move through the multiplicity of channels available, with Up corresponding to an increased channel number and Down corresponding to a decreased channel number. The Stop button can be used both to initiate a slower approach to a desired channel and to stop the channel stepping when the desired channel is reached.

20 The selector 34 sends out an infrared signal as usual which is detected and interpreted by an infrared receiving circuit 40 in the TV set 32.

It will be appreciated that the method of the invention can be applied to any type of parameter, whether that parameter is continuous in nature, such as screen brightness, or positional in nature such as viewing angle, or is discrete in
25 nature, such as a television channel.

CLAIMS

1. A method of changing the value of a parameter from a current value to a desired value comprising the steps of:-

- 5 inputting a first directional command to cause the parameter to vary at a first speed in a first direction; and
 inputting a second directional command to cause the parameter to vary at a different speed either in the first or in the opposite direction.

- 10 2. A method according to Claim 1, in which the second directional command is a repeat of the first directional command which causes the parameter to vary in the first direction at a speed higher than the first speed.

3. A method according to Claim 1, in which the second directional
15 command is different to the first directional command and causes the parameter to vary in the opposite direction at a lower speed than the first speed.

4. A method according to any preceding claim, in which there are two possible directional commands corresponding to "Up" and "Down" whereby
20 the parameter is increased or decreased in value.

5. A method according to any preceding claim, in which there is a third command corresponding to "Stop" which causes the parameter to retain its current value.

25

6. A method according to Claim 5, comprising the steps of inputting a first command; inputting a stop command; and inputting a second command whereby the parameter varies in the first direction at a slower speed than the first speed.

30

7. A method according to any preceding claim, in which the commands are voice commands.

8. A method according to any one of Claims 1 to 6, in which the
5 commands are manually input commands.

9. Apparatus for changing the value of a parameter from a current value to a desired value comprising control means to control the parameter; and input means to which the control means is responsive; wherein the input means
10 is arranged to input directional commands whereby the control means varies the parameter in response to a first directional command at a first speed in a first direction and then in response to a second directional command varies the parameter at a different speed in the first or in the opposite direction.

15 10. Apparatus according to Claim 9, in which the input means is a voice recognition device.

11. A method of changing a parameter substantially as hereinbefore described with reference to the accompanying drawings.

20

12. Apparatus for changing a parameter substantially as hereinbefore described with reference to the accompanying drawings.

ABSTRACT

METHOD AND APPARATUS FOR SETTING A PARAMETER

5 A parameter is set to an accurate value, by voice control or manual input,
by giving the commands Up, Down and Stop. The command "Up" increases the
value of the parameter at a first speed; a subsequent command "Up" increases
the value at a greater speed; alternatively a subsequent command "Down"
decreases the value at a lower speed than the first speed. The parameter can
10 be, for example, screen brightness or viewing angle in a medical domain, or
channel in a multi-channel television set.

(Figure 1)

1 / 2

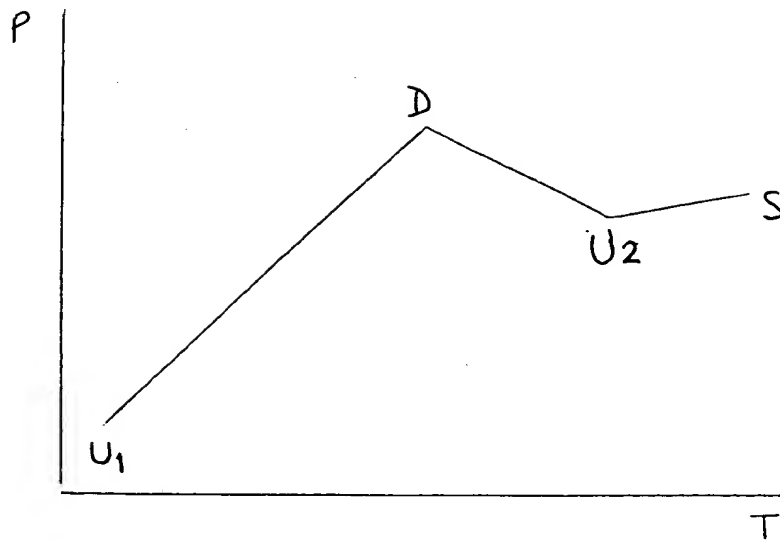


FIG. 1

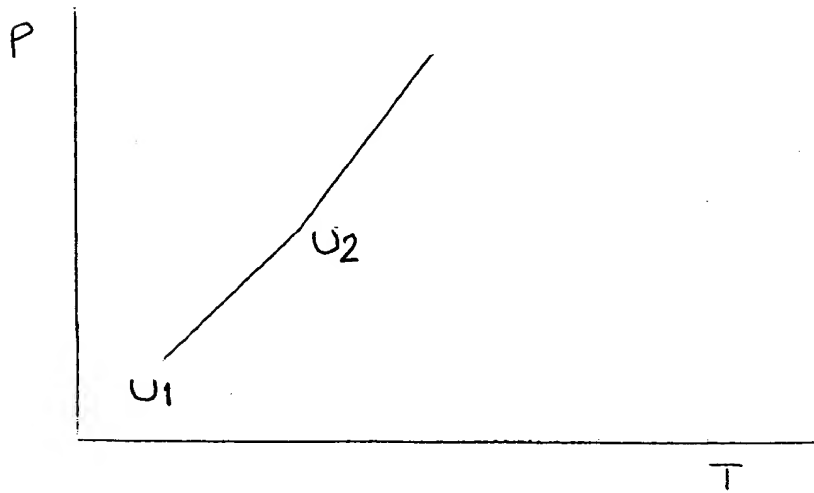


FIG. 2

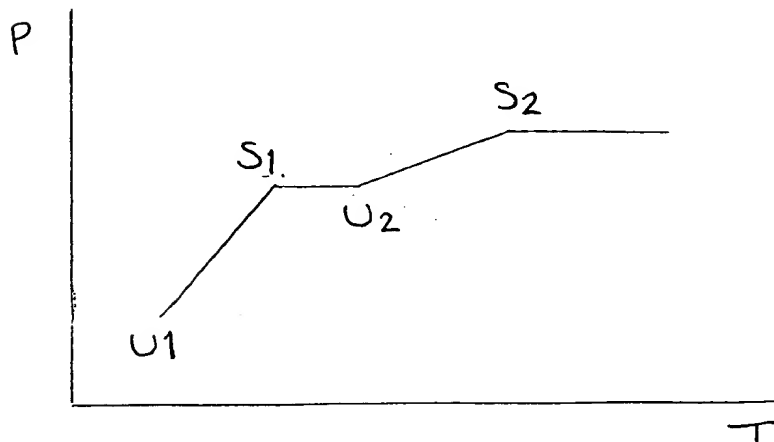


FIG. 3

2 12

FIG. 4

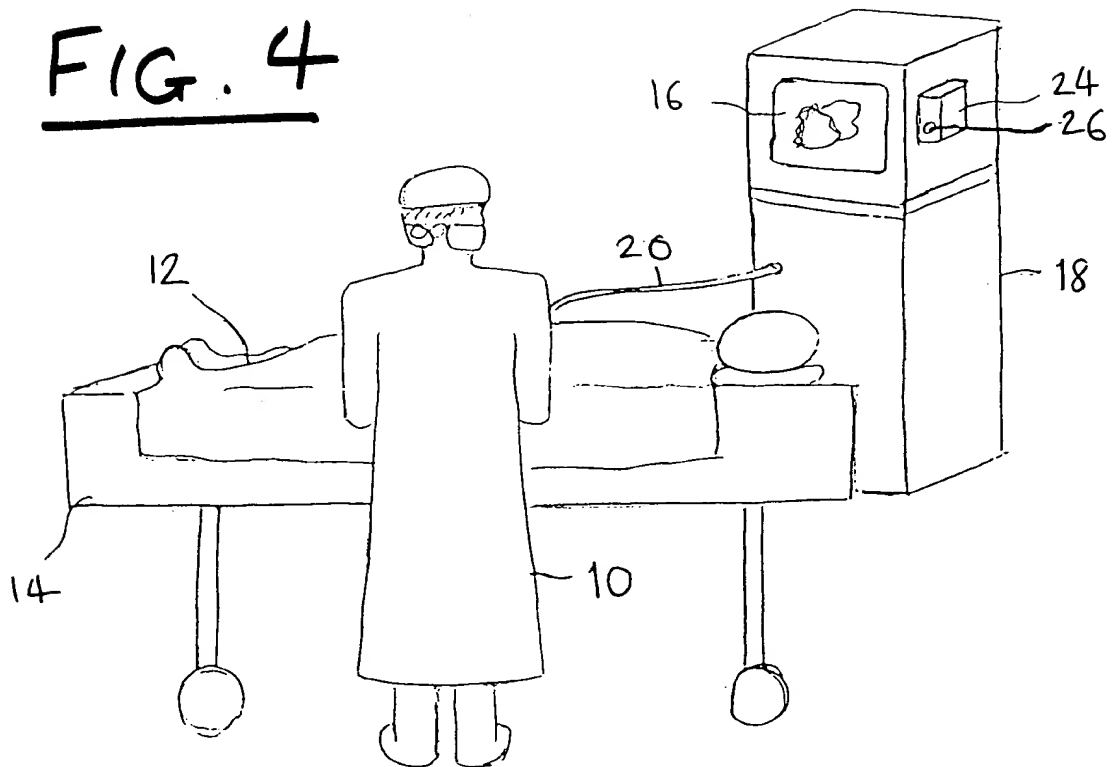


FIG. 5

